PASSAIC RIVER RI/FS
PROGRESS REPORT #35
REPORTING PERIOD: October 15, 2005 through November 11, 2005
DATE: December 14, 2005

Contract Number:	DACW41-02-D-0003	
EPA IAG Numbers:	DW96941915 and DW96941975	
Task Orders:	0008/0011	
Malcolm Pirnie Project Numbers:	0285-924/4553-001, -025, and -027	
USEPA Remedial Project Manager:	Alice Yeh	212-637-4427
Malcolm Pirnie Project Manager:	Len Warner	914-641-2972
Malcolm Pirnie Deputy Project Manager:	Scott Thompson	914-641-2628
USACE Contact:	Beth Buckrucker	816-983-3581

Summary of Contract Actions

Task Order	Contract Action	Date Signed	Cost	Fee	Total Cost
0008	ATP 1	10/15/02	FOIA Exemption (b)(4) - CBI		$852,610
0008	ATP 2/WVN1	2/4/03			$0
0008	ATP 3/WVN2	9/22/03			$0
0008	ATP 4/WVN3	7/28/04			$10,297
0008		Subtotal➔			$862,907
0011	ATP 1	3/11/03			$325,262
0011	ATP 2/WVN 1	9/10/03			$325,262
0011	ATP 3/WVN 2	11/6/03			$0
0011	ATP 4/WVN 3	12/1/03			$502,836
0011	ATP 5/WVN 4	2/4/04			$94,236
0011	ATP 6/WVN 5	4/29/04			$155,206
0011	ATP 7/WVN 6	5/17/04			-
0011	ATP 8/WVN 7	8/27/04 – verbal authorization			$1,313,167
0011	Interim WVN	2/23/05 via e-mail			$0
0011	ATP 9/WVN 8	3/31/05			$926,281
0011	ATP 10/WVN 9	9/6/05			$3,800,148
0011		Subtotal➔			$7,442,398
			Grand Total Authorized Amount; TO 0008/0011		$8,305,305

1. Progress Made This Reporting Period.

WAD 01

This WAD has been closed.

WAD 02

This WAD has been closed.

WAD 03

Closure of this WAD is planned upon completion of WO 04, WE 4.2d. Under WE 4.2d, Battelle staff completed work on manual data entry of Minish Park sediment chemistry data on October 20th and subsequently forwarded the data to Malcolm Pirnie for review and uploading to PREmis.

WAD 04

Malcolm Pirnie (Pirnie), Battelle, and HydroQual (HQI) participated in a bi-weekly conference call on October 31, 2005 with project team members from USEPA Region 2 and USACE – KC District. The bi-weekly conference calls are generally scheduled for every other Tuesday at 9:30 AM ET.

Topics discussed during the October 31st call included the processing of the 1995-96 TSI hydrodynamic data for the model calibration; the exclusion of the USACE 1994 data from the model calibration due to the limited extent of the data collection (3 short-duration excursions); HQI's preparation of a memo suggesting the inclusion of SEDZLJ in the sediment transport modeling, the need to engage Craig Jones to assist in the incorporation of SEDZLJ into ECOM and ST-SWEM (carbon model); direction from Alice Yeh that HQI pause sediment transport modeling efforts; the need for a coordination call between the risk assessors and modelers prior to the BERA workshop; a teleconference between Battelle, Pirnie, and Marian Olsen of USEPA on consumption rates, lead uptake in fish/elimination of lead analyses from fish tissue programs, and NJDEP data; transmittal of the Minish Park electronic dataset from Battelle to Pirnie; impending completion of Battelle's biota plots for the geochemical evaluation task; an update on the high resolution coring field efforts and low resolution coring planning; the preparation of a "mass per unit area" delineation for the IRM using historic TSI sediment data; and a review of the PREmis action items.

Pirnie, Battelle, and HQI participated in weekly internal briefing calls with Pirnie task leaders and Battelle and HQI project managers. These calls are scheduled on Monday mornings from 9:30-10:30 AM ET.

On November 29, 2005 Pirnie submitted a Progress Report and revised Budget Status and Forecast (BSF) covering the period from September 17 to October 14, 2005 to the USACE and USEPA. HQI and Battelle submitted progress reports and reports of expenditures to Pirnie in support of this effort.

A Project Delivery Team (PDT) Meeting was held on November 2, 2005. Topics discussed included a presentation by Ed Garvey of Malcolm Pirnie on the progress of the high resolution coring and water column sampling activities, preparation for the dredging pilot, ongoing hydrodynamic modeling efforts, discussions between USEPA and NJDEP regarding fish consumption rates for the risk assessment, tentative schedule for a planning workgroup meeting prior to the next PDT meeting, ongoing review of the comments received on the Draft CIP, data on additional sources of mercury in the Newark Bay complex, ongoing field work by TSI in Newark Bay, and the establishment of a Newark Bay coordination team by USACE-NY.

CIP support activities are on hold pending further direction from USEPA/USACE.

WAD 05

Work efforts in this WAD were focused on the following project elements: Field Activities; Laboratory Issues/Subcontracts; Planning Documents; and Risk Assessment. These topics are discussed below.

FIELD ACTIVITIES

Hydrodynamic Data/Moored Instrumentation

The moorings and associated instruments removed from the Passaic River were cleaned of barnacles and encrustations to allow downloading of the collected data and the return of rental equipment (except for the equipment to be loaned to Rutgers for the Dredging Pilot monitoring). The moorings will not be re-deployed since this portion of the hydrodynamic data collection scope is complete.

Water Column Sampling Program

The first round of SPMD samples were retrieved from the Passaic River and tributary locations during the period October 24th through November 4th (retrieval was conducted over several days as floodwater receded at various locations and the SPMDs could be safely obtained). A second round of semipermeable membrane devices (SPMDs) were

deployed in the Passaic River at RM 0, 2.5, 4.5 and 10.5 on October 31st through November 4th.

On November 3rd and 7th, orientation and mobilization efforts were conducted to prepare for the small volume grab sampling effort, focusing on coordination of the clean hands sampling techniques to be used for the collection of aqueous sample aliquots intended for mercury and methyl mercury analyses. Sample collection was conducted using a field team composed jointly of HQI and Pirnie personnel.

On November 8th, the small volume grab sampling event was conducted at 4 stations in the main channel of the Passaic River (RM 0, 2.5, 4.5, and 10.5). The samples were collected from each station beginning after low tide in the morning and continuing until high tide. Samples were collected from 4 boats using peristaltic pumps and transferred through pre-cleaned tubing (proofed by the laboratory) into pre-cleaned, laboratory-proofed sampled containers. Clean hands techniques were used to collect trace mercury and methyl mercury composite samples (using glove boxes) at each station. At the stations at RM 0, 2.5, and 4.5, samples were collected from 5 nodes at the surface (freshwater stratum) and from 3 deep nodes (saline stratum). At RM 10.5, samples were collected from 5 nodes at the surface only. Field filtering was conducted at the field facility after grab sample collection for the trace metals samples; filtering of the samples slated for mercury analysis was performed at the laboratory to reduce the risk of sample contamination.

On November 10th, small volume grab samples were collected from the tributaries (Second River, Third River, Saddle River) and at the Ackerman Bridge (to characterize the Dundee Dam upstream boundary).

Composite samples were submitted for trace metals, chlorinated herbicides, mercury and methyl mercury, volatile organics, semivolatile organics, chlorophyll a, POC, DOC, TSS, and other parameters. Approximately 500 individual sample jars were generated and managed for the small volume grab sampling event. Samples shipped to Brooks Rand laboratory on November 8th were not delivered until November 10th due to an error on the part of Fedex. Sample holding times were not impacted.

<u>High Resolution Coring</u>

During the reporting period, core collection was completed at location 026 and subsequently the final two high resolution coring sites (013 and 028) were occupied. Groups of cores were collected from each site (classification core, core for processing and chemical sampling, archive, x-radiograph core) and samples were submitted from the cores for radiochemistry and TOC analysis. Personnel from Battelle and HQI participated in the core processing field work with Pirnie personnel. The following high resolution cores were collected:

026* (RM 6.4) – October 20th

013* (RM 10.0) – October 21st
028* (RM 10.8) – October 24th

*For cores less than 10 feet in length, a second core was collected, processed and sampled to address minimum sample volume requirements.

Additional sample volume from the cores intended for future chemical parameter analysis was archived in the on-site freezer. Archive cores, cores slated for x-radiograph analysis, and core segments for physical properties analyses (grain size) were stored in the on-site freezer and refrigerator as appropriate.

PLANNING DOCUMENTS

A teleconference with the Sampling Workgroup to discuss Low Resolution Coring locations was held on October 24th. Topics discussed are documented in the teleconference summary notes distributed by USEPA via e-mail on November 14, 2005.

FSP Volume 2 preparation activities are on hold.

RISK ASSESSMENT

Ecological risk assessment activities conducted under the Conceptual Site Model/Problem Formulation task consisted of effort related to the Toxicity Assessment. Battelle compiled available ecotoxicological data for risk drivers (including dioxin, mercury, PCBs, DDT, dieldrin, and PAHs).

Human health risk activities included a teleconference on Wednesday, October 26. Participants included Pam Rodgers and Nancy Bonnevie (Battelle), Marian Olsen (USEPA), and Rich Califano (Malcolm Pirnie). The discussion included an overview of the consumption rates derived in the various pieces of literature reviewed (*i.e.*, citations for Burger, Kirk-Pflugh, NJDEP, and USEPA), the lack of data available in the Creel/Angler survey conducted by CLH on the lower 6 miles of the Passaic to develop a consumption rate, and what should be considered from the creel angler surveys to support a consumption rate.

FOIA Exemption (b)(5) - Predecisional and deliberative

FOIA Exemption (b)(5) - Predecisional and deliberative

. USEPA will send Region 10 information regarding lead in fish tissue.

MODELING

For the Hydrodynamic Modeling effort, HQI continued work related to the Model Calibration:

- Made fine adjustments to the bathymetric configuration of the Passaic and Hackensack Rivers using USACE survey data and NOAA charts. Prepared model simulation with refined bathymetry data and conducted additional calibration runs.
- Continued to identify sampling locations and collection periods for TSI hydrographic data in the Passaic River. Subsequently processed model results for 1995 water year to compare with TSI hydrographic survey data.
- Tabulated Rutgers' 2000-2002 survey data and prepared for hydrodynamic simulations for those years. Communicating with Rutgers personnel to clarify their ADCP data collected in 2004 (current meter data).
- Generated five transect depth profiles in the Lower Passaic River for sediment study at request of Pirnie.
- Started 2000-2004 hydrodynamic runs to compare model results with Rutgers survey data in Newark Bay and Kills.

For the Sediment Transport Modeling effort, HQI conducted the following tasks:

- Mass balance assessment of solids entering the Passaic River still in progress.
- Analysis of grain size data from Sedflume experiments data still in progress.
- Flocculation work still in progress between Kevin Farley and Bill McAnally.
- Submitted response to TAC concerning use of SEDZLJ as an alternative to Larry Sanford's consolidation model.

WAD 06

Work efforts in this WAD were focused on preparation of the following topics: Website/Database and Historical Geochemical Data Evaluation. These topics are discussed below.

WEBSITES/DATABASE

Pirnie performed the following work for the field application and PREmis (private) website:

- Conducted QA/QC of water column sampling field application modules (both high volume and small volume grab sampling events).

- Analyzed data for SPMD sampling events and assisted with SPMD field application module training.
- Completed programming the "Archived Samples Module," which includes a list page of all archived samples and the length of time they've been held in the archive freezer. Users can mark archives as "used" or "disposed" and composite samples from different slices for sample creation and shipment. The module supports tasks such as shipping archive samples, combining slices, changing barcodes, printing out new sample labels and COCs, and generating CLP numbers. Full use will begin the week of November 28th when the first high resolution core sediment samples are shipped for PAH analysis.
- Coordinated with subcontract laboratories on upload questions.
- Debugged PREmis calendar notification problems.
- Created database dump for review of TAMs data and subsequently uploaded TAMS data to PREmis database.
- Changed PREmis email notifications from text- to HTML-based to enhance functionality of included hypertext links.
- Created look up table for CARP database for Battelle.
- Accessed and delivered high res core data as requested to support radionuclide data analysis.
- Debugged PREmis request module.

Ongoing routine maintenance (*e.g.*, updating news items and meeting announcements) occurred on *ourPassaic.org*. Changes to the folder structure (only on public website's digital libraries) were implemented - for this period the change was only implemented in the development environment - the transfer to the production environment occurred in the next BSF period.

HISTORICAL/GEOCHEMICAL DATA EVALUATION

Shortly after October 15th an internal task plan to conduct the geochemical evaluations identified in the "Next Steps" memo was finalized. An internal kick-off meeting was held on October 20th and work began on the first task, preparation of a memo to present evaluations conducted by HQI, Battelle, and MPI from May 2005 through the current period. The draft memo was submitted for internal review on November 11th and is expected to be submitted to the USACE and USEPA on or about the week of December 5th. Estimation of a solids mass balance using the bathymetry data also began shortly after the kick off meeting. A sediment mass balance was initially created using data from the years 1989, 1995, 2001 and 2004, but 1996, 1997 and 1999 are also being examined. Mass per unit area (MPA) calculations conducted under the IRM task for several constituents fulfilled a data need for the geochemical evaluations. These analyses will undergo a quality check and will subsequently be incorporated. Finally, the analysis of mercury data was initiated. The Task Leader has reported that the geochemical evaluation is currently meeting both schedule and budget expectations.

WAD 07

Preparation of estimates of contaminant mass per unit area (MPA) from historic TSI sediment core results in the lower 6 miles of the Passaic River continued. The MPA estimates are intended to identify locations of comparatively higher contaminant mass in the river sediments for consideration as potential IRM target areas. Historic sediment data was also examined to guide the selection of low resolution coring locations that would contribute to the IRM data evaluation.

2. Issues and Recommended Solutions (or Outstanding Issues).

- Technical

  During the historical radionuclide data evaluation conducted to prepare for the high resolution sediment coring fieldwork, the Malcolm Pirnie Team became aware of a discrepancy in historical sampling locations as listed in the Passaic River Estuary Management Information System (PREmis) database. Specifically, the northing and easting coordinates were projected incorrectly in the database. Note that the PREmis database and its public counterpart provided on www.ourpassaic.org have now been updated with the corrected coordinates. Concerns were also expressed by the Cooperating Parties with respect to the assignment of what they assumed were new labels to historical core locations sampled by Tierra Solutions, Inc. (refer to the September 19, 2005 letter from de maximis, inc. to the US Environmental Protection Agency). What appeared to be "new labels" were actually unique, sequential identifiers assigned to every piece of data in PREmis, necessary to manage data compiled from multiple sources. Assigning unique identifiers is common and accepted practice in such large database development endeavors. Future project deliverables will use location labels originally assigned by Tierra Solutions, Inc. for consistency with other historical documents.

  The selection of a sediment transport model was identified as a technical issue in last month's progress report. HQI subsequently agreed to implement SEDZLJ as the sediment transport model. A TAC conference is scheduled for December 20th to discuss remaining comments on this issue; initial efforts are underway to contract with Craig Jones to assist in the implementation of SEDZLJ in the ECOM and ST-SWEM (carbon) models.

- Schedule

  The current schedule is dated November 1, 2005. The project schedule is to be updated to include additional detail for the geochemical evaluation and interim remedial measures evaluation; in addition, a number of tasks will be revised including posting of FSP 1, low resolution coring field work, development of management

website reports, etc. A draft of the revised schedule will be reviewed with USACE the week of December 19, 2005 and subsequently finalized and posted to PREmis.

- Funding

On the BSF, the current charges for WAD 04, WO 1.2a include $7,373 in Battelle charges. Battelle was originally authorized $2,992 for 2005 costs under this task. In ATP 10, their authorization was increased by $7,373. The $2,992 authorization was shown as 100% expended on Battelle's October 14th EV report, and the entire ATP 10 authorization was shown as 100% expended on Battelle's November 11th EV. We are contacting Battelle to question why they have shown 100% expenditure on their EV with 1.5 months to remain in 2005.

Also on the current BSF, the charges for WAD 04, WO 1.4a include $65,646 in Battelle charges. These charges include effort for the BERA Workshop preparation, which was proposed under the Project Communications task in ATP 10 with a total Battelle negotiated cost of $72,345. This charge has contributed to a comparatively high expenditure for this period of $88,309. Effort was also expended to prepare for the presentation at the November 2nd PDT meeting.

Pirnie and HQI held weekly discussions concerning the status of the hydrodynamic and sediment transport models. As noted above, HQI produced two memoranda regarding the sediment transport model following the Model Work Group meeting in early October. The last memorandum was distributed on November 11th. Pirnie participated in the discussions leading to these memoranda and other modeling discussions. Most of Pirnie's sediment transport modeling review budget was expended because of discussions specifically related to sediment transport, which culminated in HQI changing their approach to adopt SEDZLJ as the modeling engine. Pirnie will continue to have weekly calls with HQI and participate in the modeling discussions, as appropriate. Pirnie and HQI are also planning to meet to discuss sediment mass balance issues to assure that this component of the model is accurately described. If so directed, a WVN will be proposed to USACE and USEPA to fund Pirnie's modeling review and coordination efforts. Pirnie will not exceed the current authorized budget without USACE/USEPA approval.

Monitoring of expenditures for high resolution core processing and water column sampling continues to maintain these costs within the authorized budget. Due to higher than anticipated high resolution core processing costs, budgets will be re-examined as sediment samples are submitted for chemical analyses. It is currently anticipated that approximately 6 high resolution cores will be submitted for chemical analysis.

Regarding the Dundee Dam water column monitoring issue identified in last month's progress report, an action item has been created on PREmis to arrange a team meeting

in mid- to late-January to re-examine the scope of work for Dundee Dam data collection for 2006, considering budget and project organization issues.

A WVN will be prepared and submitted to address the expenditures on the Private Website Maintenance Task, WAD 06 WE 3.4, which have exceeded the authorized total. The WVN will consist of a $0 change with redistribution of funding within WAD 6 WOs 2-6 and will be prepared on or about the week of December 12th.

3. Anticipated/Planned Activities in Next 30 Days

Anticipated meetings, conference calls, and activities are organized by topic and presented below.

General/Project Management

Community Involvement

- As directed, Pirnie has suspended work on the CIP support activities. Work may commence in late December 2005 to prepare the Draft CIP.
- Assistance with the dredging pilot fact sheet will be provided as requested in late November.

Laboratory Issues

- High resolution core sediment samples will be submitted to CLP and the subcontract laboratories from the end of November through December.
- Pirnie will track laboratory receipt and analysis of small volume grab sample and SPMD water column samples.

Laboratory Subcontracts

- Pirnie is awaiting a response from USACE regarding the consent package for the Data Validation subcontract. A response is anticipated in late December 2005.

Field Activities

Sediment Coring and Water Column Sampling

- The second set of SPMDs will be retrieved at the end of November 2005, prior to the dredging pilot effort.
- A second high volume water column sampling event may be conducted in December 2005.
- Low Resolution Coring is expected to commence in mid-January 2005.

Risk Assessment

- Preparation for and attendance at the BERA workshop will occur during the next reporting period, as directed by USEPA. USEPA has indicated that the BERA workshop will be scheduled during the week of December 13-14, 2005. Battelle will prepare supporting materials regarding the Risk Questions, AEs, MEs, decision rule, and supporting data collection options (such as direct measures versus modeling options for assessing effects to birds, or fish, etc.) and submit to Pirnie and EPA as workshop plans progress.
- For WAD 5, WO 2.2 – CSM/Problem Formulation Task Plan, the following tasks will be conducted:
  - Refinement of Conceptual Site Model – final materials to support BERA workshop to be completed by 30 November.
  - Identification/Development of Methods for Defining EPCs – scheduled for December
  - Confirmation of Ecological Receptors – final materials to support BERA workshop to be completed by 11/30/05.
  - Refinement of Exposure Assumptions (BSAFs, habitat size) – scheduled for December
  - TRV tables and supporting text for the eco risk Toxicity Assessment to be prepared December.

Planning Documents

- A revised Low Resolution Coring sampling location map will be submitted to USACE and USEPA prior to November 30, 2005 for review and forwarded to the Sampling Workgroup prior to December 5, 2005.

Modeling Work Plan/Modeling Efforts

- HQI and Pirnie will provide responses to TAC and stakeholder comments on the Draft Modeling Work Plan. USEPA has indicated that they will provide agency and stakeholder comments on the Draft Modeling Work Plan following the TAC teleconference tentatively scheduled for December 20th (comments anticipated around mid-January 2006).
- HQI and possibly Pirnie will attend a meeting at USEPA on December 19th to discuss the schedule for the modeling effort.
- For the Hydrodynamic model:
  - Further runs will be conducted and analyzed.
- For the Sediment Transport model, HQI will:
  - Continue solids mass balance analysis.
  - Prepare for the TAC teleconference.

Historical/Geochemical Data Evaluation

- Radionuclide signatures in sediment cores will be analyzed to establish local deposition rates over the 17-mile project area and to identify Lead-210 sediment core profile discontinuities and match these discontinuities with known events such as historic floods (effort involving 2005 sediment data will be addressed under the Data Evaluation Task, WAD 06, WO 7.5).
- The local deposition rates and Lead-210 discontinuities will be mapped.
- A list of proposed benchmark chemicals will be compiled along with an interpretive narrative.

Website/Project Database

- Pirnie personnel will support upcoming utilization of the Sediment Coring module during the low resolution coring event tentatively scheduled for January 2006.
- Pirnie will schedule a teleconference with USEPA and USACE to address the development of management website reports.
- Pirnie will upload the Minish Park data to PREmis following review of Battelle's data deliverable.

4. Key Personnel Additions or Changes

None.

5. Attachments

Budget Status and Forecast, Reporting Period: October 15 – November 11, 2005.